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DATE: February 8, 2012

TO: U.S. Patent and Trademark Office
ATTN: Benjamin Schiffman

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FROM: Leon Legleiter (dbp)

RE: Patent Application Serial No. 10/590,283;
Our File No. 1680/48

NUMBER OF PAGES TO FOLLOW: 17

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Thank you and best regards.

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AGENDA FOR TELEPHONIC INTERVIEW

Date: February 9, 2012, 2012; 3:00 PM ET

Re: Serial No. 10/590,283; Atty Docket No. 1680/48

Title: METHOD OF MANUFACTURING A DRAWN BIODEGRADABLE MICRO-FILAMENT

I. Participants
   A. On behalf of the U.S. Patent and Trademark Office: Examiner Benjamin Schiffman
   B. On behalf of Applicant: Applicants counsel of record, Arles A. Taylor, Jr. and Leon R. Legleiter

II. Enclsoure: Amendment E as filed on January 24, 2012

III. Discussion of Rejection of claims 8, 25, 26 and 27 under 35 U.S.C. § 103(a) based on Suzuki in view of Ohkoshi, Leenslag and Appel

- claim 27 has been amended to recite "delivering the synthetic biodegradable filament through a blowing duct prior to heating and drawing...wherein delivering the synthetic biodegradable filament through a blowing duct guides the filament without resistance". In addition, claim 27 has been amended to recite "heating the synthetic biodegradable filament in a narrow zone...wherein the narrow zone comprises the range of within 4 mm up and down the axis direction of the filament from the filament center".

- To elaborate, the claimed method for manufacturing drawn synthetic biodegradable filament comprises:

  a) providing a synthetic biodegradable filament,

  b) delivering the synthetic biodegradable filament through a blowing duct prior to heating and drawing, wherein the delivering comprises flowing a gas in the blowing duct, wherein delivering the synthetic biodegradable filament through a blowing duct guides the filament without resistance,

  c) heating the synthetic biodegradable filament in a narrow zone using infrared beams radiated from multiple directions, wherein the narrow zone comprises the range of within 4 mm up and down the axis direction of the filament from the filament center,

  d) applying a tension of 10 MPa or less per single filament, and

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e) drawing the synthetic biodegradable filament to a draw ratio of 100 times or more.

- By heating the synthetic biodegradable filament in a narrow zone (4 mm up and down the axis of the filament) the diameter of the biodegradable filament increases, or swells. This was a new and surprising phenomenon that facilitated, at least in part, the drawing of the synthetic biodegradable filament to a draw ratio of 100 times or more. *See* page 6, lines 10-20 of the specification as filed.

- Suzuki, Ohkoshi, Leenslag and Appel, as proposed by the Patent Office, fails to teach or suggest each of the elements of present claim 27.

- Ohkoshi is being cited for its alleged teaching related to applying an infrared beam to a fiber and reflecting the beam back onto the fiber, to compensate for the admitted deficiency in Suzuki. However, applicants respectfully submit that Ohkoshi, alone or combined with Suzuki, Leenslag and Appel, would not have predictably resulted in the manufacture of a synthetic biodegradable filament with a draw ratio of 100 or more. Indeed, the stretch ratio of Ohkoshi was, at best, seven. *See* Examples 1-3 and Figure 12 of Ohkoshi. Thus, Ohkoshi is not believed to compensate for the admitted deficiency in Suzuki, thereby rendering the proposed combination ineffective in supporting the instant rejection.

- Leenslag is cited for its alleged disclosure of hot drawing of a synthetic biodegradable polymer, e.g., poly(L-lactide) (PLLA), to compensate for the deficiency in Suzuki in failing to disclose the drawing of synthetic fibers. However, the hot drawing of Leenslag occurs in a tube furnace. A tube furnace is not analogous to infrared beams. Further, Leenslag does not describe drawing the PLLA to a draw ratio of 100 or more, and at best provides for a draw ratio of 6 to 30. Accordingly, even assuming *arguendo* that one of skill in the art were to use the PLLA of Leenslag in the method of Suzuki combined with Ohkoshi and Appel, given the known poor drawing properties of synthetic biodegradable filaments, one would still have no expectation of success in drawing a synthetic biodegradable filament to a draw ratio of 100 times or more as recited in claim 27.

- Appel is cited for its alleged disclosure of the use of an air duct. Applicants respectfully submit that the blowing duct of present claim 27 is located prior to the drawing process, with the objective of achieving a high draw ratio when the biodegradable filament is guided by a blowing without resistance. In marked contrast, the alleged blowing duct (nozzle 32) of Appel is located after the filaments were drawn and quenched. It appears

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that the objective of nozzle 32 of Appel was to control the "quench air" flow rate using the "movable wall 36". Thus, it would not have been obvious nor predictable to modify the method of Suzuki with that of Appel, as proposed by the Patent Office. Therefore, Appel is not believed to compensate for the admitted deficiency in Suzuki, thereby rendering the proposed combination ineffective in supporting the instant rejection.

- Taken together, applicants respectfully submit that the proposed combination of Suzuki, Ohkoshi, Leenslag and Appel fails to support a rejection of present claim 27 under 35 U.S.C. § 103(a). In particular, for at least the reasons discussed above, the proposed combination fails to satisfy each of the elements of MPEP § 2143.02 with respect to present claim 27, and claims depending therefrom. Moreover, given the surprising results associated with heating a narrow zone that allows for a draw ratio of 100, the present claims are believed to be patentable over the proposed combination.

IV. Discussion of Rejection of claims 4-7 under 35 U.S.C. § 103(a) based on Suzuki in view of Ohkoshi, Leenslag, Appel and Davis

- Davis does not overcome the deficiencies of Suzuki, Ohkoshi, Leenslag and Appel as noted above. *See* page 12 of Amendment E.

V. Discussion of Rejection of claim 9 under 35 U.S.C. § 103(a) based on Suzuki in view of Ohkoshi, Leenslag, Appel and Tanaka

- Tanaka does not overcome the deficiencies of Suzuki, Ohkoshi, Leenslag and Appel as noted above. *See* page 13 of Amendment E.

VI. Discussion of Any Claim Amendments That Might Be Necessary.

VII. Discussion of Advisory Action dated February 2, 2012.

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Akihiro Suzuki

Group Art Unit: 1742

Serial No.: 10/590,283

Examiner: Schiffman, Benjamin A.

Filed: August 22, 2006

Docket No.: 1680/48

Confirmation No.: 8072

For: METHOD OF MANUFACTURING A DRAWN BIODEGRADABLE MICRO-FILAMENT

* *

AFTER FINAL AMENDMENT E

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

This is responsive to the Office Action dated October 24, 2011, having a term for response without extension by January 24, 2012. Favorable consideration is respectfully requested in view of the following Remarks.

Amendment

Please amend the application as follows:

Serial No.: 10/590,283

IN THE CLAIMS:

Please amend the claims as follows:

1-3. (Canceled)

4. (Previously presented) A method for manufacturing drawn synthetic biodegradable filament according to claim 27, wherein said drawn synthetic biodegradable filament is heat treated by a heating zone provided subsequently.

5. (Previously presented) A method for manufacturing drawn synthetic biodegradable filament according to claim 4, wherein said heat treatment is conducted by a zone heat treatment method.

6. (Previously presented) A method for manufacturing drawn synthetic biodegradable filament according to claim 27, wherein said drawn synthetic biodegradable filament is further drawn.

7. (Previously presented) A method for manufacturing drawn synthetic biodegradable filament according to claim 6, wherein said further drawing is conducted by a zone drawing method.

8. (Previously presented) A method for manufacturing drawn synthetic biodegradable filament according to claim 27, wherein said original synthetic biodegradable filament is drawn at the same time in the same beams delivering plural numbers simultaneously.

9. (Previously presented) A method for manufacturing drawn synthetic biodegradable filament according to claim 27, wherein said drawn synthetic biodegradable filament is accumulated on a running conveyor.

10. (Canceled)

11. (Withdrawn) A manufacturing apparatus for drawn biodegradable filament comprising; supply means of original biodegradable filament consisting of biodegradable filament, an infrared ray heating device formed of heating within a range of up-and-down 4 mm in an axial direction of a filament at the center of an original biodegradable filament by irradiating a infrared beam from plural directions against a delivered original filament, and means for controlling the heated original biodegradable filament to draw to 100 times or more by providing tension of 10 MPa or less.

12. (Withdrawn) A manufacturing apparatus for drawn biodegradable filament according to claim 11, wherein said infrared beam is a laser beam radiated from a laser emitter.

13. (Withdrawn) A manufacturing apparatus for drawn biodegradable filament according to claim 11, wherein said infrared beam emitter has mirrors to irradiate from plural directions to original filament reflecting the same beam.

14. (Withdrawn) A manufacturing apparatus for drawn biodegradable filament according to claim 11, wherein said infrared beam emitter has plural light sources to irradiate to original filament from plural directions.

15. (Canceled)

16. (Withdrawn) A manufacturing apparatus for drawn biodegradable filament according to claim 11, wherein drawn biodegradable filament is formed to be heat treated providing a heating device having a heating zone in a manufacturing apparatus for said drawn biodegradable filament.

17. (Canceled)

18. (Withdrawn) A manufacturing apparatus for drawn biodegradable filament according to claim 11, wherein a guiding tool controlling a position of the filament is

provided before said original biodegradable filament is heated with an infrared beam and has a position control device which can finely adjust the guiding position of the guiding tool.

19. (Withdrawn) A manufacturing apparatus for non-woven fabrics consisting of drawn biodegradable filament according to claim 11, wherein a running conveyor is provided to a manufacturing apparatus for said drawn biodegradable filament and is formed to accumulate drawn biodegradable filament on the conveyor.

20-24. (Canceled)

25. (Previously presented) The method for manufacturing drawn synthetic biodegradable filament according to claim 27, wherein the original synthetic biodegradable filament is an aliphatic polyester.

26. (Previously presented) The method for manufacturing drawn synthetic biodegradable filament according to claim 27, wherein the original synthetic biodegradable filament is polyglycolic acid, polylactide, polyglutamic acid, poly-p-dioxic acid, poly-α-malic acid or poly-β-hydroxybutyric acid.

27. (Currently amended) A method for manufacturing drawn synthetic biodegradable filament, comprising:

a. providing a synthetic biodegradable filament;

b. delivering the synthetic biodegradable filament through a blowing duct prior to heating and drawing, wherein the delivering comprises flowing a gas in the blowing duct, wherein delivering the synthetic biodegradable filament through a blowing duct guides the filament without resistance;

c. heating the synthetic biodegradable filament in a narrow zone ~~the range of within 4 mm up and down the axis direction of the filament from the filament center~~ using infrared beams radiated from multiple directions, wherein the narrow zone

comprises a range of within 4 mm up and down the axis direction of the filament from the filament center;

d. applying a tension of 10 MPa or less per single filament; and

e. drawing the synthetic biodegradable filament to a draw ratio of 100 times or more.

28. (Withdrawn) A drawn biodegradable super micro-filament made according to the method of claim 27, wherein said drawn biodegradable filament have 60% or more of X-ray orientation degree and a diameter of the drawn filament is 12 μm or less.

29. (Withdrawn) A drawn biodegradable super micro-filament made according to the method of claim 27, wherein said drawn biodegradable filament consists of polylactic acid or polyglycolic acid, birefringence of the drawn filament is 0.015 or more and a diameter of the drawn filament is 12 μm or less.

30. (Withdrawn) A biodegradable non-woven fabric made according to the method of claim 27, wherein it consists of said drawn biodegradable filament.

31. (Withdrawn) A fiber product consisting of a drawn biodegradable filament made according to the method of claim 27, wherein each of a fiber product group consisting of said drawn biodegradable filament is different in a filament diameter and is a product group of different biodegradable speed by difference in the filament diameters.

REMARKS

I. Status Summary

Claims 1, 4-9, 11-14, 16, 18, 19 and 25-31 are pending in the present application. Claims 11-14, 16, 18, 19 and 28-31 have been withdrawn. Claims 4-9 and 25-27 have been examined by the Patent Office and currently stand rejected.

Claim 27 has been amended. Support for the amendment can be found in the instant specification at page 6, lines 10-20; page 9, line 21, through page 10, line 11; and page 25, lines 3-18. No new matter has been added.

Reconsideration of the claims in view of the remarks and amendment herein is respectfully requested.

II. Response to Rejections under 35 U.S.C. § 103(a) over Suzuki in view of Ohkoshi, Leenslag and Appel

Claims 8, 25, 26 and 27 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over JP 2003-16615 A to Suzuki et al. (hereinafter "Suzuki") in view of U.S. Patent No. 6,497,952 to Ohkoshi et al. (hereinafter "Ohkoshi"), Leenslag et al. (1984 *Journal of Applied Polymer Science* 29:2829-2842; hereinafter "Leenslag"), and U.S. Patent No. 4,340,563 to Appel et al. (hereinafter "Appel"). The Patent Office contends that Suzuki teaches a method for manufacturing drawn filament comprising the steps of drawing an original filament to a draw ratio of 1000 times or more by tension of 1 MPa or less per single filament while heating with an infrared beam where the beam diameter is 4.3 mm and would be within a maximum of 2.15 mm from the center of the filament. The Patent Office further contends that Suzuki teaches that the process can be applied to natural fibers that are inherently biodegradable.

The Patent Office concedes that Suzuki does not expressly disclose a plurality of beams in a method for manufacturing drawn synthetic biodegradable filament as presently claimed. However, the Patent Office alleges that Ohkoshi discloses a method of applying an infrared beam to a fiber to heat and draw the fiber and that the beam is reflected back at the fiber. Thus, the Patent Office contends that it would have been obvious to modify the method of Suzuki to include the beam control of Ohkoshi in order

to control the size of the irradiated region of the thread and to control the temperature of the thread during drawing.

The Patent Office concedes that Suzuki does not expressly disclose that the biodegradable filaments manufactured by the claimed methods are synthetic. However, the Patent Office alleges that Leenslag discloses hot drawing of a synthetic biodegradable polymer, e.g., poly(L-lactide) (PLLA). Therefore, the Patent Office contends that it would have been obvious to apply the method of Suzuki to the fibers of Leenslag because the hot draw of PLLA filaments was allegedly known.

Finally, the Patent Office concedes that Suzuki does not expressly disclose delivering the synthetic biodegradable filament through a blowing duct in a method for manufacturing drawn synthetic biodegradable filament as presently claimed. However, the Patent Office alleges that Appel discloses a method of forming non-woven webs comprised of filaments wherein the fibers are drawn by the action of flowing air through a duct.

Taken together, the Patent Office contends that it would have been *prima facie* obvious to modify the teachings of Suzuki with the aspects of the teachings of each of Ohkoshi, Leenslag and Appel to arrive at the presently claimed methods.

After careful consideration of the rejections and the Patent Office's bases therefore, applicants respectfully traverse the rejections and submit the following remarks.

Initially, applicants respectfully submit that claim 27 has been amended to recite "delivering the synthetic biodegradable filament through a blowing duct prior to heating and drawing...wherein delivering the synthetic biodegradable filament through a blowing duct guides the filament without resistance". Support for the amendment can be found in the instant specification as filed, for example, at page 23, line 21, through page 24, line 17; page 25, lines 3-18; and Figure 4. In addition, claim 27 has been amended herein to recite "heating the synthetic biodegradable filament in a narrow zone using infrared beams radiated from multiple directions, wherein the narrow zone comprises the range of within 4 mm up and down the axis direction of the filament from the filament center". Support for the amendment can be found in the instant specification at

page 6, lines 10-20; and page 9, line 21, through page 10, line 11. No new matter has been added.

Applicants respectfully submit that the presently disclosed and claimed subject matter provides for the manufacturing of drawn synthetic biodegradable filament from an original synthetic biodegradable filament at a large draw ratio. Synthetic biodegradable filaments, such as for example polylactic acid fibers, polyglycolic acid fibers, polyglutamic acid fibers, poly-p-dioxic acid fibers, poly-α-malic acid fibers or poly-β-hydroxybutyric acid fibers, and the like, are difficult to draw and manufacture into microfibers due to poor spinning and drawing properties. *See, e.g.*, the Background of the Invention section at pages 1-3 of the instant specification. As described in the instant specification, the presently disclosed subject matter can provide large draw ratios for these hard to draw fibers by rapid drawing at a high temperature in a narrow zone at a relatively low tension level. *See* the instant specification at page 7, lines 2-4 and page 9, lines 8-20. Claim 27 expressly recites drawing the synthetic biodegradable filament to a draw ratio of 100 times or more.

To elaborate, the claimed method for manufacturing drawn synthetic biodegradable filament comprises: a) providing a synthetic biodegradable filament, b) delivering the synthetic biodegradable filament through a blowing duct prior to heating and drawing, wherein the delivering comprises flowing a gas in the blowing duct, wherein delivering the synthetic biodegradable filament through a blowing duct guides the filament without resistance, c) heating the synthetic biodegradable filament in a narrow zone using infrared beams radiated from multiple directions, wherein the narrow zone comprises the range of within 4 mm up and down the axis direction of the filament from the filament center, d) applying a tension of 10 MPa or less per single filament, and e) drawing the synthetic biodegradable filament to a draw ratio of 100 times or more. *See* present claim 27.

The presently claimed method, including heating the synthetic biodegradable filament in a narrow zone using infrared beams radiated from multiple directions, wherein the narrow zone comprises the range of within 4 mm up and down the axis direction of the filament from the filament center, makes it possible to heat a narrow zone of the biodegradable filament rapidly and uniformly. By heating the synthetic

biodegradable filament in a narrow zone (4 mm up and down the axis of the filament) the diameter of the biodegradable filament increases, or swells. This was a new and surprising phenomenon that facilitated, at least in part, the drawing of the synthetic biodegradable filament to a draw ratio of 100 times or more. *See* page 6, lines 10-20 of the specification as filed.

Additionally, the presently claimed method for manufacturing drawn synthetic biodegradable filament can achieve a draw ratio of 100 times or more (claim 27) by delivering the synthetic biodegradable filament through a blowing duct, wherein the delivering comprises flowing a gas in the blowing duct, wherein delivering the synthetic biodegradable filament through a blowing duct guides the filament without resistance. As described in the instant specification, the use of a blowing duct, wherein a gas (e.g., air) can be actively delivered through the duct (e.g., in the running direction of the filament), can be advantageous, since it does not disturb the running of the filament by resistance, i.e. guides the filament without resistance. *See* the instant specification at page 25, lines 3-18. The biodegradable polymers of the presently disclosed and claimed subject matter are difficult to draw and need to be drawn under constant low tension over a narrow tension range. Therefore, it is desirable to lead the original filament smoothly without resistance to the irradiation section where the narrow zone is heated by irradiation. If resistance is present, i.e. in the absence of a blowing duct, the tension is not stable at a tension as low as 10 MPa and lower, as presently claimed. Thus, the presently claimed method overcomes this challenge by using a blowing duct to deliver the filament prior to heating and drawing.

Applicants respectfully submit that to support a contention of obviousness: (a) all the claimed elements must be known in the art; (b) one skilled in the art could have combined the elements as claimed by known methods with no change in their respective functions; and (c) the combination would have yielded nothing more than predictable results to one of ordinary skill in the art. See Manual of Patent Examining Procedure (hereinafter "MPEP") § 2143.02. The mere fact that references can be combined or modified does not render the combination obvious unless the results would have been predictable to one of ordinary skill in the art. See MPEP § 2143.01, citing *KSR International Co. v. Teleflex Inc.*, 550 U.S. ___, ___, 82 USPQ2d 1385, 1396

(2007). Applicants respectfully submit that the combination of Suzuki, Ohkoshi, Leenslag and Appel, as proposed by the Patent Office, fails to teach or suggest each of the elements of present claim 27. Moreover, the proposed combination would not have predictably resulted in the presently claimed method of claim 27.

In particular, the Patent Office concedes that Suzuki does not expressly disclose a plurality of beams in a method for manufacturing drawn synthetic biodegradable filament as presently claimed. To compensate for this deficiency, applicants respectfully believe that Ohkoshi is being cited for its alleged teaching related to applying an infrared beam to a fiber and reflecting the beam back onto the fiber. However, applicants respectfully submit that Ohkoshi, alone or combined with Suzuki, Leenslag and Appel, would not have predictably resulted in the manufacture of a synthetic biodegradable filament with a draw ratio of 100 or more. Indeed, the stretch ratio of Ohkoshi was, at best, seven. *See* Examples 1-3 and Figure 12 of Ohkoshi. Thus, Ohkoshi is not believed to compensate for the admitted deficiency in Suzuki, thereby rendering the proposed combination ineffective in supporting the instant rejection.

In marked contrast to the presently disclosed and claimed subject matter which is directed to methods of manufacturing drawn synthetic biodegradable filament, Suzuki, at best, describes applications for natural fibers, e.g. silk, or applications for filaments comprising a readily drawn polymer, e.g., nylon, PET and polypropylene. However, the Patent Office alleges that Leenslag discloses hot drawing of a synthetic biodegradable polymer, e.g., poly(L-lactide) (PLLA). However, the hot drawing of Leenslag occurs in a tube furnace. *See* Leenslag, page 2830. A tube furnace is not analogous to infrared beams. Further, Leenslag does not describe drawing the PLLA to a draw ratio of 100 or more, as claimed in claim 27. At best, Leenslag provides for a draw ratio of 6 to 30 when using an entrance velocity of 2 cm/min and a take up bobbin speed of 12-60 cm/min. *See* Leenslag, page 283. Table II and Figure 8 of Leenslag appear to describe draw ratios of between 5.0 and 11.8. *See* Leenslag, page 2836. Accordingly, even assuming arguendo that one of skill in the art were to use the PLLA of Leenslag in the method of Suzuki combined with Ohkoshi and Appel, given the known poor drawing properties of synthetic biodegradable filaments, one would still have no expectation of success in drawing a synthetic biodegradable filament to a draw ratio of 100 times or

more as recited in claim 27. Indeed, the objective of the hot drawing of Leenslag was to improve the strength of the drawing, not to achieve a draw ratio of 100 or more as presently claimed. Reference is also made to Figures 7-11 of the instant specification, which show that the instantly claimed methods can provide drawn polylactic acid and polyglycolic acid with draw ratios over 100 and in some cases over 1000. Thus, Leenslag is not believed to compensate for the admitted deficiency in Suzuki, thereby rendering the proposed combination ineffective in supporting the instant rejection.

Finally, the Patent Office concedes that Suzuki does not expressly disclose delivering the synthetic biodegradable filament through a blowing duct in a method for manufacturing drawn synthetic biodegradable filament as presently claimed. However, the Patent Office alleges that Appel discloses a method of forming non-woven webs comprised of filaments wherein the fibers are drawn by the action of flowing air through a duct. Applicants respectfully submit that this aspect of the instant rejection appears to be based on an inaccurate reading of Appel.

In particular, the blowing duct of the presently disclosed and claimed subject matter is located prior to the drawing process, with the objective of achieving a high draw ratio when the biodegradable filament is guided by a blowing without resistance. Present claim 27 has been amended to recite that the delivery via the blowing duct is prior to heating and drawing, as depicted in Figure 4. In marked contrast, the alleged blowing duct (nozzle 32) of Appel is located after the filaments were drawn and quenched. It appears that the objective of nozzle 32 of Appel was to control the "quench air" flow rate using the "movable wall 36". Thus, it would not have been obvious nor predictable to modify the method of Suzuki with that of Appel, as proposed by the Patent Office. Therefore, Appel is not believed to compensate for the admitted deficiency in Suzuki, thereby rendering the proposed combination ineffective in supporting the instant rejection.

Taken together, applicants respectfully submit that the proposed combination of Suzuki, Ohkoshi, Leenslag and Appel fails to support a rejection of present claim 27 under 35 U.S.C. § 103(a). In particular, for at least the reasons discussed above, the proposed combination fails to satisfy each of the elements of MPEP § 2143.02 with respect to present claim 27. Each of claims 8, 25, and 26 depend from claim 27 and

therefore include each and every element of claim 27. Thus, claims 8, 25, and 26 are also distinguishable from the cited combination.

Applicants respectfully request that the rejection of claims 27, 8, 25, and 26 under 35 U.S.C. § 103(a) over Suzuki, Ohkoshi, Leenslag and Appel be withdrawn and further request that claims 27, 8, 25, and 26 be allowed at this time.

III. Response to Rejections Under 35 U.S.C. § 103(a) over Suzuki in view of Ohkoshi, Leenslag, Appel and further in view of Davis

Claims 4-7 have been rejected under 35 U.S.C. § 103(a) upon the contention that the claims are unpatentable over Suzuki in view of Ohkoshi, Leenslag, Appel and further in view of U.S. Patent No. 4,101,525 to Davis et al. (hereinafter "Davis"). The Patent Office concedes that Suzuki does not expressly disclose further heating and drawing the drawn filament in heating and drawing zones. However, the Patent Office contends that Davis discloses a method of drawing a filament wherein the drawn filament is subjected to heating and drawing in zones. Therefore, the Patent Office contends that it would have been obvious to modify Suzuki to include the further heating and drawing of Davis in order to improve the properties of the final filament.

After careful consideration of the rejections and the Patent Office's bases therefore, applicants respectfully traverse the rejections and submit the following remarks.

Applicants respectfully submit that claims 4-7 depend from claim 27 and therefore include each and every element of claim 27. As noted hereinabove, Suzuki, Ohkoshi, Leenslag and Appel, either alone or in combination, do not teach each and every element of claim 27. Applicants respectfully submit that Davis is being cited herein for its alleged teaching with regard to heating zones. Davis does not overcome the deficiencies of Suzuki, Ohkoshi, Leenslag and Appel with regard to claim 27.

As such, applicants respectfully submit that Suzuki, Ohkoshi, Leenslag, Appel and Davis do not teach or suggest each and every element of claim 27 or its dependent claims, claims 4-7. Applicants respectfully request that the rejection of claims 4-7 under 35 U.S.C. § 103(a) over Suzuki, Ohkoshi, Leenslag, Appel and Davis be withdrawn and further ask that claims 4-7 be allowed at this time.

IV. Response to Rejections Under 35 U.S.C. § 103(a) over Suzuki in view of Ohkoshi, Leenslag, Appel and further in view of Tanka

Claim 9 has been rejected under 35 U.S.C. § 103(a) upon the contention that the claim is unpatentable over Suzuki in view of Ohkoshi, Leenslag, Appel and further in view of U.S. Patent No. 5,506,041 to Tanaka et al. (hereinafter "Tanaka"). The Patent Office concedes that Suzuki does not expressly disclose collecting the filaments on a running conveyor. However, the Patent Office contends that Tanaka discloses a method of forming biodegradable filaments that are collected onto a conveyor. Therefore, the Patent Office contends that it would have been obvious to modify Suzuki to include the collecting of Tanaka because collecting fibers on conveyors in order to form non-woven fabrics was well known in the art.

After careful consideration of the rejections and the Patent Office's bases therefore, applicants respectfully traverse the rejections and submit the following remarks.

Applicants respectfully submit that claim 9 depends from claim 27 and therefore includes each and every element of claim 27. As noted hereinabove, Suzuki, Ohkoshi, Leenslag and Appel, either alone or in combination, do not teach each and every element of claim 27. Applicants respectfully submit that Tanaka is being cited herein for its alleged teaching with regard to conveyors. Tanaka does not overcome the deficiencies of Suzuki, Ohkoshi, Leenslag and Appel with regard to claim 27.

As such, applicants respectfully submit that Suzuki, Ohkoshi, Leenslag, Appel and Tanaka do not teach or suggest each and every element of claim 27 or its dependent claim, claim 9. Applicants respectfully request that the rejection of claim 9 under 35 U.S.C. § 103(a) over Suzuki, Ohkoshi, Leenslag, Appel and Tanaka be withdrawn and further ask that claim 9 be allowed at this time.

CONCLUSION

In light of the above Amendments and Remarks, it is respectfully submitted that the present application is now in proper condition for allowance, and an early notice to such effect is earnestly solicited.

Serial No.: 10/590,283

DEPOSIT ACCOUNT

The Commissioner is hereby authorized to charge any fees associated with the filing of this correspondence to Deposit Account No. **50-0426**.

Respectfully submitted,

JENKINS, WILSON, TAYLOR & HUNT, P.A.

Date: 01/24/2012 By: _____

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1680/48 AAT/LRL/dbp